



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re Application of :
Guha, Dwipendra Nath : Exr Chiu, Raleigh W.
Serial No. 10/533,789 : Art Unit 3711
Filed: May 4, 2005 :
For THREE DIMENSIONAL MAZE GAME

November 26, 2007

COMMUNICATION

Honorable Commissioner of Patent
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Enclosed herewith are a certified copy of priority document pertaining to the above-identified application, a credit card payment form for issue and publication fees, and a signed and dated copy of a Notice of Allowance and Fees Due.

As these are all timely submitted prior to the due date of December 5, 2007, entry and approval of this submission are respectfully requested.

The Commissioner is hereby authorized to charge any underpayment of fees or credit any overpayment of fees in connection with this communication to Deposit Account Number 502840.

Respectfully submitted,
Lau & Associates, LLC.

A handwritten signature in black ink, appearing to read "Michael Lau". The signature is fluid and cursive, with a large initial "M" and a stylized "L".

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No. : Certified Copy/2007.

Date : 20th Nov 2007.

TO ALL TO WHOM THESE PRESENTS SHALL COME :

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE PATENT OFFICE OF THIS PAPER OF THE BELOW IDENTIFIED INDIAN COMPLETE SPECIFICATION NO. 621/CAL/2002 DATED 5TH NOVEMBER, 2002 AT KOLKATA, INDIA UNDER SECTION 147 OF THE PATENTS ACT, 1970.

INDIAN PATENT APPLICATION NUMBER : 621/CAL/2002.
(DATE OF FILING 05.11.2002)

**By Authority of the
CONTROLLER GENERAL OF PATENTS, DESIGNS
& TRADE MARKS.**


**(D. K. RAHUT)
Certifying Officer.**



FORM 1

THE PATENTS ACT, 1970
(39 of 1970)

APPLICATION FOR GRANT OF A PATENT

[See sections 5 (2), 7, 54 and 135 and rule 33A]

C.B.R. No. 4716
A.R. No. 621/02/02
5/11/02
1. I, (a) GUHA, Dwipendra Nath, (b) 50-B Turf Road, Calcutta - 700 025, State of West Bengal, India, (c) an Indian National.

2. hereby declare -

(a) that I am in possession of an invention titled **HAND HELD TOY**.

(b) that the Complete specification relating to this invention is filed with this application.

(c) that there is no lawful ground of objection to the grant of a patent to me.

3. further declare that the inventor for the said invention is

(a) GUHA, Dwipendra Nath (b) 50-B Turf Road, Calcutta - 700 025, State of West Bengal, India, (c) an Indian National.

4. I, claim the priority from the application(s) filed in convention countries, particulars of which are as follows :

NONE

5. I state that the said invention is an improvement in or modification of the invention, the particulars of which are as follows and of which I am the applicant/patentee:

NOT APPLICABLE

6. I/We state that the application is divided out of my/our application, the particulars of which are given below and pray that this application deemed to have been filed on _____ under section 16 of the Act

NOT APPLICABLE

7. That I am/We are the assignee or legal representative of the true and first inventors.

NOT APPLICABLE

8. That my address for service in India is as follows :

S. MAJUMDAR & CO., 5, Harish Mukherjee Road, Calcutta - 700 025, State of West Bengal. Phone : 0-33-4557484/4557485/4557486 ; Fax : 0-33-4557487/4557488.

9. I am the true and first inventors for this invention declare that the applicant(s) herein is/are my/our assignee or legal representative.

NOT APPLICABLE

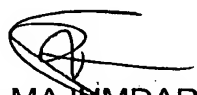
10. That to the best of my knowledge, information and belief the fact and matters stated herein are correct and that there is no lawful ground of objection to the grant of patent to me on this application.

11. Followings are the attachment with the application :

- (a) Complete specification (3 copies).
- (b) Drawings (2 sheets) (in triplicate).
- (c) Statement and Undertaking on FORM -3.
- (d) Fee Rs. 1500.00 in cheque bearing No.
Date 5th November 2002.

I request that a patent may be granted to me for the said invention.

Dated this 5th day of November 2002.


S. MAJUMDAR
of S. MAJUMDAR & CO.
Applicant's Agent

To
The Controller of Patents
The Patent Office Branch
At Calcutta

FORM - 2

THE PATENTS ACT, 1970

(39 OF 1970)

COMPLETE SPECIFICATION

(See Section 10)

1. TITLE OF INVENTION

HAND HELD TOY

2. GUHA, Dwipendra Nath, 50-B Turf Road, Calcutta-700 025, State of West Bengal, an Indian National.

The following specification particularly describes the nature of the invention and the manner in which it is to be performed.

HAND HELD TOY

Field of the invention

The present invention relates to a hand held toy in the form of a cube comprising a unique three-dimensional maze. An object is inserted into an entry point in the toy and the player has to bring the object out through an exit point by following a fixed number of steps in turning the toy. The challenge is to find the correct sequence of turns and considerable amount of mental dexterity is required for the purpose.

Background of the invention

Numerous maze games are known which require various degrees of physical skill in order to move an object from the entry to the exit point. Many of the known mazes are in the form of tortuous channels or passageways in two/three-dimensions through which an object viz. marble has to be guided from the start to the end point. The toys are generally transparent in order to make the pathways visible to the player who has to guide the object/marble by selecting a path by proper orientation of the maze.

US 2509340 relates to a puzzle of the maze ball type wherein a maze is provided, having an entrance and an exit and a tortuous path therebetween, through which a ball is adapted to be passed, a plurality of false paths also being provided. The maze is adapted to be contained in a transparent sphere such that the moving object/ball in the maze is visible to the payer at all times. The sphere is constructed of two hemispheres with the pathways suitably moulded. Thereafter, the hemispheres are assembled by aligning the pathways and sealing the device. Conversely, the pathways may be drilled subsequent to the formation of the device from the exterior of the device and their ends suitably sealed with plastic.

US 3406971 teaches a novel three-dimensional labyrinth employing a moving ball dimensioned to ride within configured slots in stacked transparent sheets maintained in

a fixed array. The device consists of a plurality of planar elements, each having one or more slots therein which when stacked, form an organized pattern through which a movable member, such as a ball, may move. The ball is guided by the sides of the slot while being maintained at its vertical reference level by the underlying planar element. The maze complexity may be increased by false routes. The player has to tilt the device in order to guide the object through the slots. Because of the gap between the planar elements and their relative thinness, the object is visible from two sides and helps in the game.

US 4005865 teaches a three-dimensional amusement device comprising a hollow transparent container. The container is wrapped, in a multitude of bends and directions, a hollow, transparent tube joined at its ends by a joining plug, thereby forming a continuous, multi-planar three-dimensional passageway network located entirely within the container. The joining plug is marked to indicate start and finish, and forms a carrier in the passageway. Within the passageway is located a small bead of mercury capable of moving as a bead through the continuous passageway from one end of the plug to the other. The object of the amusement is to tilt the container in such a fashion as to work the mercury bead from one end of the plug to the other via the continuous passageway. The player, while looking at the transparent pathway and the mercury bead has to use his physical dexterity and guide the bead through the complete stretch of the pathway. There are no false paths but the complexity of the game may be increases by increasing the number of bends in the pathway.

US 4008895 teaches of a maze having substantially coextensive walls one of which forms an inner three-dimensional form or shell and the other which forms an outer form or shell. Each of the shells is generally in the form of a cube and the inner shell is fixedly positioned within the outer shell so as to maintain a predetermined, uniform distance between the inner and outer walls. The outer wall is formed with a network of channels which, together with the inner wall, define a corresponding network of passageways. The passageways on each side of the outer cube are connected to the passageways on the adjacent sides of the cube so as to form interconnected passageways which permit

one or more marbles, for example, to move through the passageways on one or more sides of the cube with changes in orientation of the maze in space. Apertures are provided in at least one passageway on each side of the cube for providing points of entry and exit for the marbles into and out of the maze. By selective changes in orientation of the maze in space marbles within the maze can be made to move through the passageways without escaping through the apertures. By using a transparent outer shell, all the marbles contained within the maze may be readily observed prior to reorientation of the maze.

An important feature of US 4008895 which substantially facilitates the assembly of the maze game once the individual panels have been molded or formed, is the provision of corner portions at each of the above described channel free ends, which corner portions are dimensioned and adapted to snappingly engage with one another so as to eliminate the need of additional connecting means for joining the panels or walls to each other. As best shown in there are provided two differently sized corner portions, namely wide corner portions and narrow corner portions. The wide corner portions are extensions of the respective channel free ends, as to be described, and define ninety degree bends in the connected channels to permit the marbles, for example, to move between associated channels formed on opposite sides of the maze by being deflected by ninety degrees during such transition of sides.

US 4494753 relates to a transparent enclosed cube containing a maze constructed of a plurality of layers of parallel square tubes separated by other layers of parallel square tubes, each tube having at least one opening to a neighboring tube, entrance opening to insert a ball therein that will traverse the maze to an exit opening by gravity when the cube is manipulated about its three axes. The ball may be made with a resilient surface and the entrance opening may be smaller than the other tube openings so the ball must be squeezed through the entrance. Thus the pathway may be changed by a different arrangement of the square tubes. False paths are automatically formed as the tubes have apertures that lead to the next parallel tube and while playing if the aperture is missed, the ball will be trapped inside the tube.

US 5560606 teaches a cubicle maze puzzle including a transparent cubicle main portion having an upper end and a lower end. The main portion has transparent walls formed therein. The walls define a plurality of chambers within the main portion. The walls have a plurality of apertures formed therein defining a tortuous path from an entrance point in the upper end to an exit point in the lower end. The device includes a ball that is dimensioned for receipt within the entrance point of the transparent cubicle main portion for traveling through the tortuous path defined by the plurality of apertures to be ejected outwardly through the exit point.

The above mentioned prior art relate to three-dimensional maze where the pathways are visible to the player. The complexity is increased by increasing the number of pathways, bends and false ends. For a successful completion of the games the player has to skillfully guide the object/ball through the pathways from the entry to the exit point. Thus, only physical dexterity is required and the games do not require any strategic skill. Moreover, the maze-games cannot be played in steps, i.e. the total playing process cannot be divided into steps involving a straight pathways so that the player has to think of the next combination or specified movement required in order to guide the ball into the next intersection. Moreover, all the prior arts are difficult to make, involving complicated segments and are expensive to manufacture.

US 4545577 teaches a maze game device for moving one or more game objects from a starting position to a finish position which includes a housing enclosing a plurality of tunnels which are movable in location within the housing in response to the depressment of buttons which extend outwardly from various locations on the housing and the concurrent tilting and orienting of the housing. The game object or objects are maneuverable from the starting location to the finish location by orientating the housing and depressing the buttons either singly or in combination to align the tunnels to provide a path for moving the game object from the starting location to the finish location. One or more game objects are allowed access into the housing through one or more openings in the housing by the depressment of the particular game control which aligns

a tunnel directly beneath the opening in the housing. The game piece is then maneuvered through the housing by means of both depressing a game control or a combination of game controls and tilting and orientating the housing in different positions to cause the tunnels to provide a path for the game object to a desired location and to cause the game objects to then follow that path. The game thus contains mechanical means to accentuate buttons and the construction of the same is complicated.

US 4861036 teaches a multi-level crossing maze toy, wherein nine kinds of single cubes of the same size in the number as desired are combined longitudinally, laterally and thicknesswise to form a combined cube, the combined cube being formed in two surface thereof with an entrance and an exit open thereto, opening of the cube are singly associated when the combined cube is formed, and a dead end passage, a linear passage, a curved passage, a T-passage, a right-angle three-forked passage, a cross passage, a five-forked passage and a six-forked passage formed interiorly of a single cube are freely placed in communication with one another to form a multi-level crossing maze. Therefore, a ball is introduced into the multi-level crossing maze from the entrance of the combined cube to which is connected the single cube, and the combined cube is operated to move the ball and remove it from the exit. The present invention provide means in which a complicated maze invisible from outside is formed interiorly of a combined cube or a complicated maze a part or whole of which can be seen through from the out side is formed so that one may remind of the structure of the maze and pleasantly naturally learn the brain judgement, thinking power and patience.

US 4861036 teaches a visible maze which is made invisible by placing the same inside an opaque combined cube so that the player has to remember the maze pattern in order to successfully guide the ball through it. The game thus requires a good memory to play but does not require strategic or combination skills. Moreover, the smooth pathways will always lead the ball to the end of the vertically aligned pathway and a certain amount of physical skill is required to guide the ball into the desired pathway from an intersection. Ultimately, the movement of the ball will depend on the physical

skill of the player. Additionally, the maze pathway is created by a plurality of cubes and these cubes have to be combined in order to define the pathway. Thus, it is also expensive to manufacture.

Objects of the invention

Thus the object of the present invention is to provide a toy comprising a three-dimensional maze which requires considerable amount of mental and strategic skill to play.

Another object of the present invention is to provide a toy that will be easy to construct and thus will be less expensive to manufacture.

A further object of the present invention is to provide a toy that will be hand held and does not require physical skill to play but success would entirely depend on the mental skill of the player.

Yet further object of the invention is to provide a toy that can be played in steps, wherein completion of every step will require mental skills and only a correct sequence of steps will lead to success.

Summary of the invention

Thus according to the present invention it is provided a hand held toy comprising

a substantially cubic opaque/translucent body containing a plurality of intersecting pathways for an object, forming a three-dimensional maze;

an entrance aperture and single/multiple exit apertures connecting the pathways;

wherein each intersection formed by the said intersecting pathways is provided with means to bring the said object to rest till the toy is tilted and the object follows the vertically disposed pathway.

Detailed description of the invention

The hand held toy of the present invention comprises a cube with a three-dimensional maze. It has an entrance aperture and single or multiple apertures connecting the pathways. The plurality of pathways intersect where there are false pathways. Preferably, each intersection has two pathways leading to the next intersection and three false pathways. All the pathways are either parallel or perpendicular to each other. Each intersection is provided with a cavity facing the pathway leading to the entrance point. The cavity prevents the object from further rolling when it reaches the intersection. Now, by tilting the cube to any four of the possible ways so as to rest the cube on any four of the adjacent sides, the object can be made to follow any one of the four pathways originating from the intersection. If the wrong pathway is chosen, the object will enter a blind lane. Only when the right pathway is chosen by tilting the toy to the corresponding side, the object will move to the next intersection and stop there due to another similar cavity at the intersection. Similarly, by the right choice of the side the object can be successfully guided to the exit point.

Description of the preferred embodiments

The invention will now be described with reference to a non-limiting embodiments of the toy shown in the figures of the drawings, in which

Figure 1 shows a three-dimensional drawing of the toy comprising a cube where a thick line shows the centerline of the principal pathway.

Figures 2a & 2b are views of typical pathway-intersections.

Figure 3 is the cross-sectional view along X – X in Fig 1.

Figure 4a is the top view of another embodiment with top cover removed.

Figure 4b is a sectional view through the entry hole of the embodiment shown in Fig 4a.

Figure 4c is a sectional view through the exit hole of the embodiment shown in Fig 4a.

Figures 1, 2a, 2b & 3 describe a preferred embodiment of the present invention. The toy comprises a cube (1) with the entry and exit points at opposite ends. At the beginning of the game, the cube rests on the side having the exit point and the side with the entry hole (3), marked "START" facing up. A ball of correct size is dropped through the entry hole and it comes to rest at the conical end (4) just after passing a four-way crossing (5) where four paths direct towards four sides as rights angles to the vertical path are located. The position of the conical end is such that a ball resting on it will not roll until the cube is further tilted to any one of the four adjacent sides. The conical end is centrally located at the intersection so that the ball will roll to that path of the four-way crossing towards which the cube is tilted and the path becomes vertical. Out of the four paths originating from the intersection (excluding the pathway from the entry point), three paths (6) end as blind lanes and only one hole continues towards another four-way crossing ending with a conical end after passing the crossing. In Fig 1 the broken lines at the crossing represent the blind lanes whereas the solid line (2) with arrow-heads shows the path that if followed will lead to the exit hole ultimately. The ball will follow the solid line only when the cube is rolled with correct side down. If the ball ends in a blind lane for not following the correct sequence then it will not come out through the exit hole. If it is held up at the first crossing, it will be visible through the entry hole when at start position. If it is held up at some other crossing then the cube must be shaken back and forth and side to side keeping it resting with the entry hole up. This will allow the ball to drop into one of the vertical holes and come to the rest on top of the plug (7) of the bottom plate (8) hinged to the main body (1). All vertical holes directed downwards when the cube is in the start position, except the exit hole (9) are plugged

by the projections on the bottom plate. By unsnapping the bottom plate and tilting it the ball can be retrieved for further attempts. The sides of the cube can be covered with plates of different colours to help in playing the game and finding the solution quickly.

Another embodiment of the present invention is illustrated by the figures 4a, 4b & 4c. Figure 4a is the top view with top cover removed and 4b & 4c two cross-sections views, one through the entry hole and another through the exit hole. In this embodiment the core piece (10) is shown as a simple molded piece having the pathways with intersections where each hole has an opening at least from one side so that the pathway can be molded easily. There are two transparent caps, one (11) at the top entry end and the other (12) at the bottom exit end. All the sides except the top surface is covered with different coloured plates (13) to close all the holes opening except the exit hole (14) at the bottom surface. The top surface 15 has three escape holes (16) with raised bosses (17), besides the entry hole (18). If after the player completes all the steps and finds the ball remaining entrapped inside because of one or more faulty steps, the whole body is to be set down with the top side down and shaken back and forth and sideways which will make the ball come out through one of the escape holes (16) and come to rest on the inside surface (19) of the top cover. This surface slopes towards one edge to keep the ball away from the escape hole openings so that the ball will not drop accidentally through them when the cube body is turned over, topside up, to start the game. Since the entry hole do not have a boss around it, just by tilting the ball can be made to enter it. The specialty of this version of the embodiment is that the ball (20) never escapes the body and even when it comes out of the exit hole it stays inside the bottom cover partially out of the hole being visible to indicate successfully completion of the game. To make the success more noticeable, the ball when it comes out of the exit hole may connect two terminals of an electric circuit consisting of a battery and a bulb. This lighted bulb can also be used in making the coloured plates glow if they were made of translucent plastic material.

I claim :

1. A hand held toy comprising

a substantially cubic opaque/translucent body containing a plurality of intersecting pathways for an object, forming a three-dimensional maze;

an entrance aperture and single/multiple exit apertures connecting the pathways;

wherein each intersection formed by the said intersecting pathways is provided with means to bring the said object to rest till the toy is tilted and the object follows the vertically disposed pathway.

2. A hand held toy according to claim 1, wherein the said means is a substantially conical/cuboidal cavity.

3. A hand held toy according to claim 2, wherein the said cavity faces the pathway leading to the entrance aperture.

4. A hand held toy according to claim 1, wherein each said pathway leads to three blind pathways and two other pathways leading to the next intersection.

5. A hand held toy according to claim 1, wherein the pathways are moulded inside the body.

6. A hand held toy according to claim 1, wherein the said body comprises an entrance aperture and a single exit aperture.

7. A hand held toy according to claim 5, wherein the said entrance aperture and the said exit aperture are located at opposite sides of the body.

8. A hand held toy according to claim 5, wherein the said body comprises a bottom plate hinged to the said body.
9. A hand held toy according to claim 1, wherein the said body comprises an entrance aperture and multiple exit apertures.
10. A hand held toy according to claim 9, wherein one of the said multiple aperture is located at the opposite side of the entry aperture and the rest of the said multiple apertures are located on the same side of the entry aperture.
11. A hand held toy according to claim 9, wherein the said rest of the exit apertures have raised bosses.
12. A hand held toy according to any one of the preceding claims, wherein the said exit aperture comprises two terminals of an electrical circuit.
13. A hand held toy according to claim 12, wherein the said electrical circuit comprises a battery and a bulb.
14. A hand held toy according to claims 12 & 13, wherein the terminals are adapted such that the said bulb glows when the object comes out of the exit aperture.

Dated this 5th day of November 2002



S. MAJUMDAR
of S. MAJUMDAR & Co.
Applicant's agent

ABSTRACT

Hand held toy in the form of a cube comprising a unique three-dimensional maze. The toy comprises a substantially cubic opaque/translucent body containing a plurality of intersecting pathways for an object, forming a three-dimensional maze; an entrance aperture and single/multiple exit apertures connecting the pathways; wherein each intersection formed by the said intersecting pathways is provided with means to bring the said object to rest till the toy is tilted and the object follows the vertically disposed pathway. The object is inserted into an entry point in the toy and the player has to bring the object out through an exit point by following a fixed number of steps in turning the toy. The challenge is to find the correct sequence of turns and considerable amount of mental dexterity is required for the purpose.

To
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At Calcutta

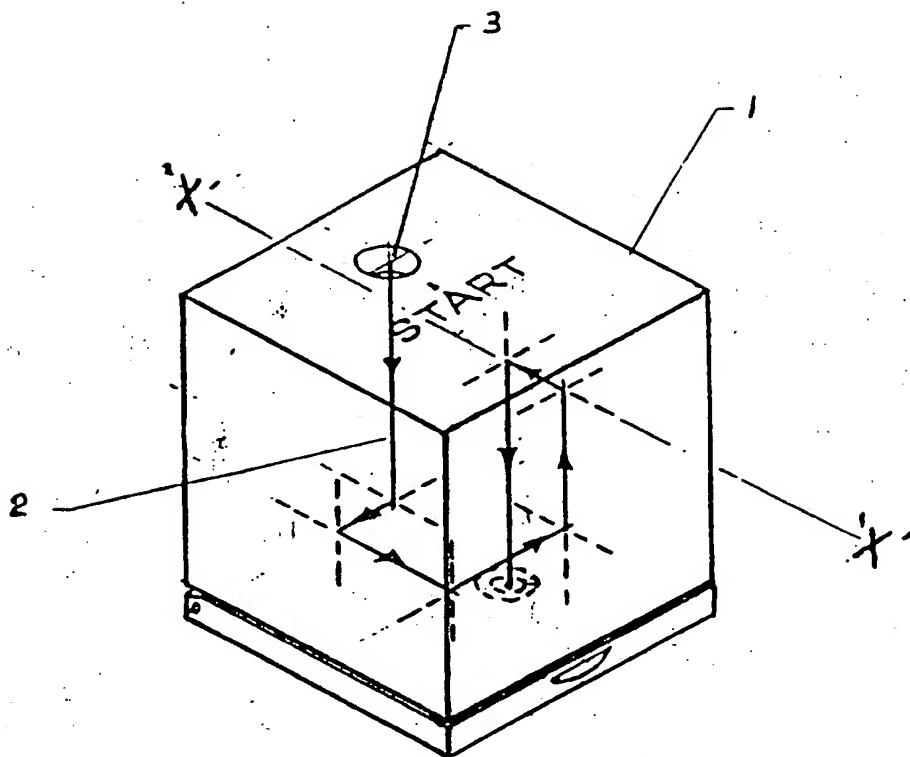


FIG. 1

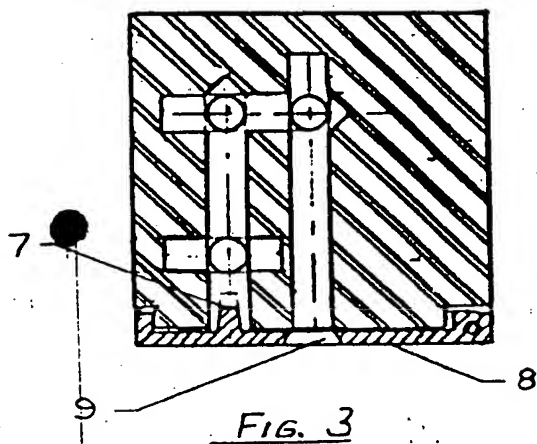


FIG. 3

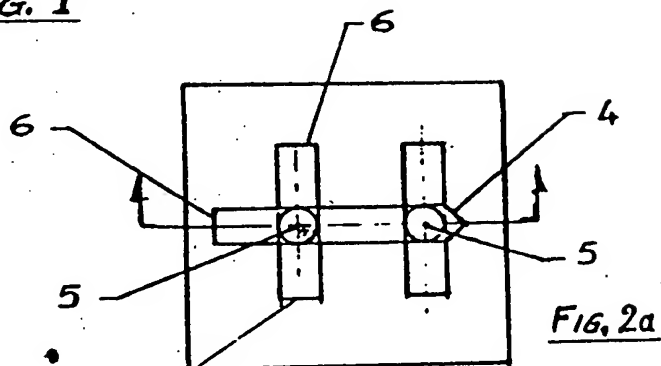


FIG. 2a

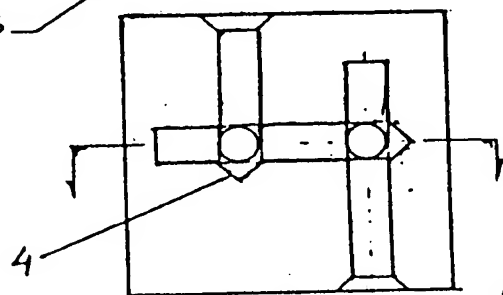


FIG. 2b

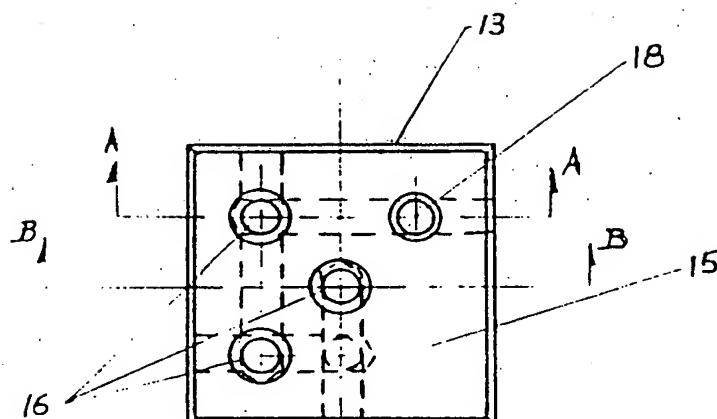


FIG 4a

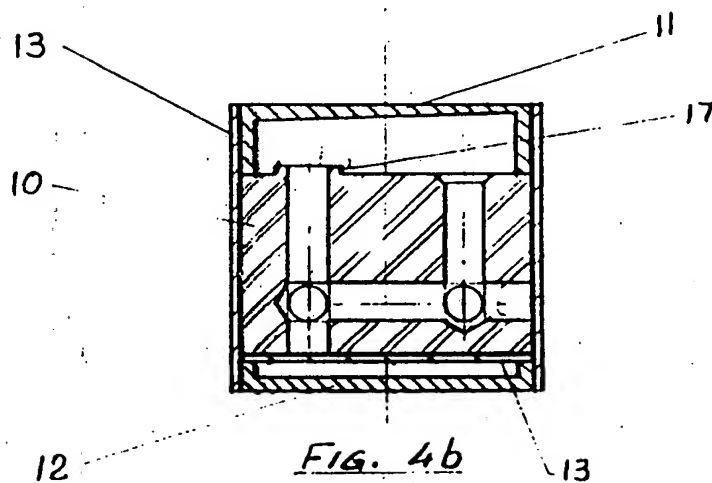


FIG. 4b

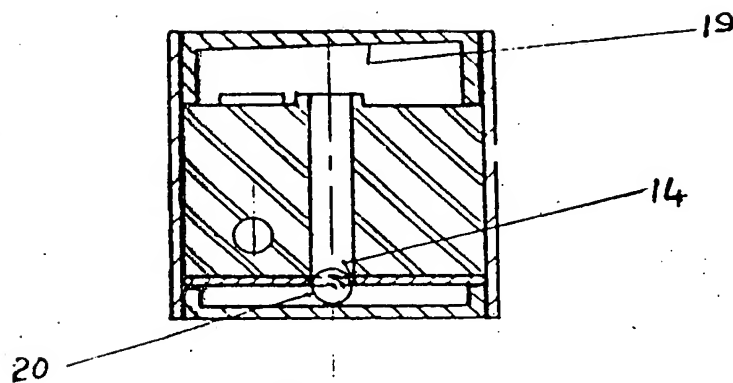


FIG 4c

